Abstract

Speech recognition is an area of Natural Language Processing and Artificial Intelligence. To achieve good accuracy and efficiency of Automatic Speech Recognition (ASR) system for Indian Gujarati language is a challenging task due to its morphology, language barriers, different dialects, and unavailability of resources. This paper presents proposed architecture of ASR for Gujarati language. Raw input data have been collected from 4 male and 2 female who belongs from age between 18 to 36 years to prepare dataset for training purpose. The goal of Speech recognition system is to make machines capable enough to operate in natural languages. ASR is a system to convert vocalized form to visualized form using different computational devices. This convincing approach is useful to the people having disabilities deaf or inability to use input device. In this paper we have used Hidden Markov Model Toolkit HTK Tool to measure performance and error parameters. The system implementation analyzed WR (Word Recognition Rate) 95.9% and WER (Word Error Rate) as 5.85 % in Lab environment. For the open noisy environment calculated WR was 95.1% and WER found 7.40%. 
References


Index Terms

Computer Science

Pattern Recognition

Keywords
Acoustic Model, Hidden Markov Model, Gujarati, Speech-To-Text